

WEST Search History

DATE: Thursday, October 30, 2003

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
		result set	
side by side			
	<i>DB=USPT; PLUR=YES; OP=OR</i>		
L9	L8 and l7	101	L9
L8	@ad<19960521	2313203	L8
L7	L6 and l5	328	L7
L6	(bill or billing) near7 (record or report or information or summary)	7062	L6
L5	L4 and l3 and l2 and l1	976	L5
L4	telephon\$ near7 network\$	34594	L4
L3	(visit\$ or local or foreign\$)near7 (provider or system or network\$ or terminal or station)	77176	L3
L2	home near7 (provider or system or network\$ or terminal or station)	22223	L2
L1	roam or roaming or roamer	4065	L1

END OF SEARCH HISTORY

WEST Generate Collection

103

L9: Entry 83 of 101

File: USPT

Mar 1, 1994

DOCUMENT-IDENTIFIER: US 5291543 A

TITLE: Cellular telephone real time account administration system

Abstract Text (1):

A cellular telephone call administration system processes detailed call records from a cellular switch as the calls are processed. This arrangement expedites automatic, electronic distribution of detailed call records to resellers and service provider billing facilities and to the roam billing clearing house. The call administration system, without operator intervention, provides a metered billing class of service to customers as an aid to controlling their cellular communication expenses; and provides for registration of roam sets for service on a cellular switch without need for a billing agreement with the set's home carrier.

Application Filing Date (1):19920624Brief Summary Text (4):

Cellular telephone service is widely available in major population centers through competing cellular carriers. The owner of each cellular "set" is a customer of a particular "home" cellular carrier and is assigned to a "home" switching area. Each cellular set has a unique manufacturer's identification number, Electronic Serial Number (ESN), which is employed in making calls. Additionally, the "home" cellular carrier assigns a telephone number in the national numbering plan to each set. A cellular set may "roam" beyond its "home" area; however, "roam" service to a set is generally provided by foreign carriers that have a working billing agreement with the set's home carrier. Certain carriers permit a roam set to be manually registered for credit card billing for service rendered by the carrier.

Brief Summary Text (8):

Fraud and billing delays associated with "roam" cellular sets has created hardship for cellular carriers. Since each cellular carrier is responsible for long distance charges placed as a 1+ call, many cellular carriers, as a matter of operating policy, will not permit a roam set to place 1+ long distance call. This policy is dictated by fraud associated with many roam sets; and the long delay in processing and receiving payment for billing to a roam set customer. Although manual temporary registration of a roam set is available in some areas, the registration and billing processes are so cumbersome that there is little reason for a carrier to offer the option or for a customer to use the option.

Brief Summary Text (9):

Roam customers are frustrated by such limited available service while they are outside the service area of their home carrier; and by their inability to receive service in cities where no agreement exists with their home carrier.

Brief Summary Text (18):

Roam sets served by contract with home carriers;

Brief Summary Text (22):

Roam sets served without home carrier contract;

Brief Summary Text (24):

Advantageously, the services provided by our implementation of the above noted service classes improve billing performance for the cellular carrier; and provide improved and

new services to reseller and roam customers.

Brief Summary Text (26):

In the case of billing to roam sets which are served by a contract with a set's home carrier, our system, on a near real-time basis, provides roam call files in industry standard "CIBER" format which are automatically sent daily directly to a roam clearing house electronically. This in contrast to present industry practice to transfer roam call data to a "Billing Service Provider" by tape storage which is moved by courier. After the roam calls are processed, the billing service provider sends the roam call data in CIBER format to one of two national clearing houses.

Brief Summary Text (28):

In accordance with our invention, we provide an improved service for roam customers in foreign switch areas not served by roam agreements with their home carrier. When a roam customer attempts to place a call through a cellular switch which includes our call administration system, the call proceeds if the roam set is covered by a contract between its home carrier and the local carrier. However, if the set is not covered by an inter-carrier agreement, the attempted call is diverted to an interactive voice terminal within our system. The voice terminal, without operator intervention, presents an opportunity for the roam customer to secure payment for roam calls through the local switch through an approved national credit card. This transaction is conducted by voice from the voice terminal and by DTMF signals from the cellular set.

Brief Summary Text (29):

With these arrangements, a carrier can provide service to a "roaming" cellular set without the need for an agreement with the set's "home" carrier; and the carrier can be assured of payment for both air time and 1+ long distance charges. The cellular carrier automatically submits charges to the credit card company electronically without the complexity and loss of time incurred in current roam call billing practices.

Brief Summary Text (30):

In the case of service to resellers who rent sets owned by the reseller, our call administration system maintains complete up-to-date call records in the reseller's facility. Accordingly, a reseller can provide complete detailed billing information at the time that a customer returns a set. Additionally, our system includes provision for a reseller to electronically activate and deactivate their sets in the cellular switch without cumbersome FAX messages and the concomitant delays in processing requests.

Detailed Description Text (6):

Internal to the switch 100, there is a call record tape system 135 with removable tapes. As calls are processed by switch 100, records of the calls are stored on a disk memory (not shown). On demand by an operator, the call data records can be transferred to the removable tape of tape system 135. It is common practice to transfer "raw call data" records daily. The raw call data records stored on the tape contain information which is required to bill customers for both cellular air time and long distance charges. There is no industry standard which defines the exact makeup of a raw call data record. Accordingly, such records are switch dependent and the details may vary from switch to switch and may be different for different switch manufacturers. In any event, the call records contain sufficient information to provide detailed billing to the customers; and an entity which generates bills has full knowledge of the makeup of the call records.

Detailed Description Text (9):

Because of the fragmentation of cellular telephone switching among many switch proprietors, the presence of different types of resellers, and the problems of roam sets, billing for cellular service has been complex, expensive and quite inefficient. A major problem of cellular billing is the long time delay between the time that a service is rendered and the time that billing is presented to a customer and payment is received.

Detailed Description Text (10):

FIG. 2 illustrates the flow of billing information in current cellular telephone systems. All paths shown in FIG. 2 are implemented by the physical transfer of tapes

, by courier.

Detailed Description Text (11):

In FIG. 2, billings for the cellular switches of carriers 201 and 202 are handled by a shared independent billing service provider 205. The paths 203, 204 represent physical transfer of raw call data record tapes from carriers 202 and 201 to billing service provider 205. Tapes are sent by courier at daily to weekly and even longer intervals. The billing service provider 205, provides monthly bills to the individual customers and to resellers 207 on a monthly basis. The bills to the individual customers cover air time used, 1+ long distance calls, roamer charges, and any service charges.

Detailed Description Text (12):

The billings to the resellers by tapes transported by courier, via path 208, cover reseller access charges; cellular airtime "rated" at the reseller's bulk rates for calls at various times of the day, 1+ long distance charges, roamer charges, and any service charges.

Detailed Description Text (13):

On a weekly or bi-weekly basis, the billing provider 205, by courier via path 206, transmits roam call detail tapes for calls processed by a client carrier to a roam clearing house 240. The roam call detail tapes contain complete detailed data which defines the cellular set engaged in the call, details about the call, details of the foreign carrier that provided service, rated air time and long distance charges, and tax information. At the present time there are at least two roam clearing houses in the United States.

Detailed Description Text (14):

The roam clearing house/ examines the roam call detail records for proper format and age; sorts the roam call detail tape records by carrier, and weekly or bi-weekly transmits tapes by courier to the appropriate billing service providers. Any call records which are not in the industry standard format and any call records that are more than 30 days old are rejected and tapes with those records are returned to the appropriate billing service providers for resolution. The billing service providers, also, may dispute charges for certain roam call records; and return tapes with the disputed records to the foreign carrier or its agent. The clearing house, typically weekly or bi-weekly, transmits a call "exception" tape to the appropriate billing service providers for resolution.

Detailed Description Text (15):

The reasons for the long delays in billing and receiving payment for roam calls are evident from the above described manual preparation and transfer of roam call detail tapes.

Detailed Description Text (17):

In summary, in accordance with present practice, cellular carrier billing processes which are characterized by physical transfer of call detail tapes by courier are complicated, slow, and expensive. Furthermore, delays in billing customer and receiving payment cause intolerable cash flow problems for carriers.

Detailed Description Text (33):

Easy Roam sets without a home carrier contract;

Detailed Description Text (34):

Roam sets served by contract with home carriers;

Detailed Description Text (36):

As seen in FIG. 5, there is a call detail data file for each of these classes. On the basis of the inventories 501-504 of FIG. 5; and set identity information contained in the "raw" call data files, message module processor 105 classifies the raw data messages on path 118 into the appropriate classes; and passes the call record information into the corresponding call detail data files. As call records are processed by the message module 105, message rating module 113 is employed to selectively rate air time and long distance charges enumerated in the call records. In the cases of metered billing calls, contract roamer calls, and easy roamer calls, both air time and long distance charges are rated and stored in the respective call detail

records.

Detailed Description Text (38):

A major undertaking of our call administration system is the automatic electronic distribution of detailed call records to the appropriate billing facilities. In the illustrative embodiment of our system, detailed call records are sent to both contract and rental reseller facilities; to the roam set clearing house; and to the billing service providers.

Detailed Description Text (39):

Message router 111, roam router 110, and reseller router 108 are employed in the distribution of the call detail records to the various billing facilities.

Detailed Description Text (40):

Message router 111, periodically places a telephone call to the billing service provider for the local cellular switch for the purpose of downloading detailed call information from the "All other sets served" data files 510 of FIG. 5. Telephone calls are placed automatically via path 133 and the public switched network 134 of FIG. 1. The cellular carrier file server processor 107 facilitates the reading of records from the data files and the transfer of those records to the message router 111. Since archive copies of the records are maintained elsewhere, as the call records are transferred to the billing service provider and receipt is acknowledged, the records in data file 510 are purged to make room for current call records.

Detailed Description Text (41):

Roam router processor 110, like the message router module processor 111 serves to distribute the roam call records from the contract roamer data file 509 to the roam clearing house via an automatic dial-up telephone connection. The file server processor facilitates the reading of the call records from data file 509 and the transfer of those records to roam router processor 110. Again, as receipt of call records is confirmed by the clearing house, the transferred call records are purged from data file 509.

Detailed Description Text (42):

The box labeled reseller router module 108 is representative of a plurality of such facilities equal in number to the number of contract and rental resellers served by our call administration system. A reseller router module processor may communicate with the associated reseller via a telephone line 130 and the public switched network or by a dedicated or shared data link.

Detailed Description Text (43):

A router reseller module processor 108 provides two functions. The processor 108 distributes call detail records to facilities of a reseller; and permits a reseller to activate and deactivate sets from its inventory for service by the cellular switch. In the case of a reseller with a dedicated or shared data line, processor 108 distributes call data records in near real time as they are received from the DAS system. Where the processor 108 is connected to a reseller facility by a telephone line and the public switched telephone network, the processor 108 places frequent telephone calls to the reseller to distribute call records. If the reseller facility e.g., at the time of check-in of a unit, has an immediate need for up-to-date detailed call records, the service provider router 310 automatically places a telephone call to its associated reseller router processor 108; and thus receives an immediate update of detailed call records.

Detailed Description Text (48):

Check In/Out module processor 304 serves a plurality of point-of-use terminals 309 by dial-up telephone connections through the public switched network 134. Such terminals may comprise: a credit card reader, a bar code reader, a keypad, and a printer. A typical, commercially available terminal, is a VERIFONE TRANZ terminal.

Detailed Description Text (53):

Customer interface module 109 comprises an IBM compatible 286 or 386 personal computer with a Dialogic/40B voice communications board. A 40/B board supports four incoming telephone lines and each customer interface module 109 supports up to four boards. The incoming telephone lines for customer interface module 109 are assigned telephone

numbers and they terminate on the public switched telephone network 134. The customer interface module is employed in the provision of both metered billing service and easy roam service. Since these services employ different voice messages and DTMF responses, the called telephone numbers serve to direct incoming calls to the proper voice messages.

Detailed Description Text (54):

EASY ROAMER SERVICE

Detailed Description Text (55):

As indicated earlier herein, is either denied service by a carrier that does not have a roam billing agreement with set's home carrier; or a roam set customer must visit the office of a foreign carrier and apply for temporary registration and secure payment for such service. This is a completely manual procedure which is time consuming and complex.

Detailed Description Text (56):

In accordance with our invention, if a call is attempted by a roam set through a cellular switch served by our call administration system, the switch connects the roam set to an appropriate customer interface module processor 109 via path 114, public switched network 134 and a line of path 131. As part of the transaction, the switch 100 conducts an automatic number identification of the roam set.

Detailed Description Text (57):

Customer interface module 109 presents voice messages which give the roam set customer the opportunity to automatically register the set for roam service for a selected period of time. The roam set customer interacts with interface module 109 by use of DTMF signals generated by the set's keypad. The registration process includes an indication of a credit card to secure payment for service. The customer interface module, with the assistance of file server 107, invokes the services of credit card authorization and billing module processor 112. A call to a credit card authority is placed from processor 112 through path 150 and the public switched telephone network 134. If the credit card is approved, the identity of the roam set is put in easy roamer inventory 504, the details of the credit arrangement are recorded, and the set is automatically activated for service through administrative port module processor 104. Call detail records for easy roamer sets are maintained in call detail data file 508 of FIG. 5. Since the registration is for a fixed period of time, the set is automatically removed from the easy roamer inventory at the expiration of the period.

CLAIMS:

5. A cellular telephone call administration system in accordance with claim 4 characterized in that:

one of said certain service classes provides service to non-contract roam cellular sets enrolled in a home cellular switching system that does not have a roam billing agreement with a cellular telephone switching system served by said cellular telephone call administration system

said means for establishing credit authority approves credit to a non-contract roam cellular set.

6. A cellular telephone call administration system in accordance with claim 5: characterized in that:

said means for establishing credit authority approves credit to a non-contract roam cellular set for a fixed period of time;

and said call administration deactivates a non-contract roam set upon expiration of said set period of time.

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L9: Entry 5 of 101

File: USPT

Jan 25, 2000

DOCUMENT-IDENTIFIER: US 6018652 A

TITLE: Cellular telephone system having mobile charging region and area based pricing method and apparatus

Application Filing Date (1):
19950831Brief Summary Text (6):

The nature of the cellular telephone network, however, wherein system users have little or no geographical restrictions on the locations from which they may place or receive calls, makes the calculation of call charges more difficult. Rates vary based not only on some or all of the wire-line parameters mentioned above, but also on factors such as: which of several available cellular service providers carry the call; and whether the subscriber is roaming outside its own service area. Because the subscriber is generally unaware of how the foregoing factors affect the instantaneous rate calculation for each call, it is unlikely that the subscriber can make anything more than a best guess as to the charge incurred for the call.

Detailed Description Text (8):

Referring now to FIG. 3, cellular telephone service is provided within the cellular service area 10 by means of a cellular telephone system 28 comprising mobile stations (MS) 30, base stations (BS) 32, and at least one mobile switching center (MSC) 34. The mobile stations 30 are carried by each subscriber, and communicate with the base stations 32 in a manner well known to those skilled in the art by means of radio frequency communications links. Each base station 32 is located within a cell 20 (FIG. 2), and is connected to its associated mobile switching center 34 preferably through wire-lines or radio frequency links. The mobile switching centers 34 are connected to the public switched telephone network (PSTN) or other known communications network, and function to process and switch through the base stations 32 the cellular calls originated or received by the subscribers using the mobile stations 30. It will, of course, be understood that multiple mobile switching centers 34 may be needed to connect with the base stations 32 covering the area 10, and that the cells 20 in a charging region 18 for one charging area 16 may be served by different mobile switching centers 34. Furthermore, as discussed above, multiple service providers may be involved in offering the service to subscribers. To facilitate implementation of the pricing system of the present invention, however, it is preferred that the cells 20 in any given charging region 18 be served by a single mobile switching center 34 and controlled by a single service provider.

Detailed Description Text (11):

Reference is now made to FIGS. 4A-4B wherein there are shown flow diagrams illustrating the operation of the method of the present invention for providing flexible charging service based on charging areas. As discussed above, to implement the method of the present invention, a plurality of charging regions 18 are defined (preferably by the cellular service provider) to have their own special cellular charging rates. Each charging region 18 includes at least one of the plurality of cells 20 in the cellular service area 10. Next, each participating subscriber selects at least one of the plurality of charging regions 18 to define a charging area 16 for that subscriber. The subscriber defined charging area 16 is stored in the home location register (HLR) 74 of the cellular telephone system 28 (see, FIG. 3) as an associated data to the subscriber.

Detailed Description Text (18):

Whenever call set-up and connection is completed (see, steps 38 and 48), a record of the completion of the call is made in step 56 for billing purposes. The record comprises a traffic ticket and includes an indication of whether the participating subscriber was located inside or outside one of the charging regions included in its defined charging area, as well as an indication of whether notification was given to the subscriber of the rate. Storage of this information in the traffic ticket allows the service provider to prove to participating subscribers that all completed calls were processed and billed correctly.

Detailed Description Text (21) :

Reference is now again made to FIG. 3. Information concerning subscriber charging areas 16, charging regions 18 and cells 20 is stored by the system 28 in the form of four different tables in the visitor location register maintained in each mobile switching center 34. A cell table 78 stores an identification of all cells that are included within at least one of the charging areas 16. A charging region table 80 stores an identification of all charging regions 18 that are included within at least one of the charging areas 16. A cell-to-charging region table 82 stores an identification of which cells 20 belong to which charging regions 18. Finally, a charging area-to-charging region table 84 stores an identification of which charging regions 18 belong to which charging areas 16.

Detailed Description Text (23) :

In the event the participating subscriber roams to a foreign cellular area 10, the mobile switching center 34 will request delivery of the subscriber's charging area information from the home location register 74. This information is then stored in the visitor location register 76 of the currently serving mobile switching center 34, and will be used by the mobile switching center to determine and notify the subscriber of applicable calling rates. Provision is also made for the mobile switching center 34 to convert received participating subscriber charging area information from the home area 10 of the subscriber to determine a comparable charging area 16 to be implemented for the participating subscriber in the current area 10. Thus, the charging areas feature is supported as the subscriber roams from area to area.

Detailed Description Text (24) :

Referring now to FIG. 5, there is shown a simplified block diagram of the mobile station 30 including a processor 86 connected to a transceiver 88. An antenna 90 is connected to the transceiver 88 for transmitting and receiving communications over a cellular telephone network. The mobile station 30 further includes a microphone 92 and a speaker 94 connected to the processor 86 for facilitating telephonic voice communications. A display panel 96 and a keypad 98 are also included in the mobile station and connected to the processor 86.

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L9: Entry 32 of 101

File: USPT

May 5, 1998

DOCUMENT-IDENTIFIER: US 5749052 A
TITLE: Cellular telephone management system

Application Filing Date (1):
19950524

Brief Summary Text (4):

Cellular telephones are used in a cellular communications network which, in general, communicates with radio frequency (RF) signals. The cellular network is broken up into a plurality of cells each of which is provided with a radio frequency transceiver for receiving and transmitting RF signals. A number of cells are arranged around a Mobile Telephone Switching Office (an MTSO) which controls the cellular communications among its corresponding cells, and which also interfaces with other MTSO, as well as Public Switched Telephone Networks. The Public Switched Telephone Networks (PSTNs) control communications on wire line telephones.

Brief Summary Text (5):

Due to the mobile nature of cellular telephones, calls are commonly placed by a single cellular telephone from a variety of different cells, and from a variety of different local cellular networks. In fact, a single cellular telephone communication initiated from, for example, an automobile may take place as the automobile crosses boundaries between several cells. In addition, the same cellular telephone may be transported to a completely different local cellular network (e.g., from Minneapolis to Chicago) and be used to initiate a call to another cellular network. To date, this type of mobility has made call tracking and billing extremely cumbersome.

Brief Summary Text (6):

Billing information regarding the number of calls made by a particular cellular telephone must be tracked. In addition, the particular cellular carrier in the area where the call was initiated must also be identified. Further, the long distance carrier which serviced any long distance calls, and also local and federal tax charges must also be tracked during every billing cycle. All of these bits of information must then be communicated to the particular organization servicing the owner of the cellular telephone and combined into a single bill to be provided to the operator of the cellular telephone. It is not uncommon for there to be a 90 day lag between when the operator of a cellular telephone makes a call, and when the call is actually billed.

Detailed Description Text (6):

MTSO 18 communicates with Public Switched Telephone Networks (PSTNs) 20. PSTNs 20 and MTSO 18 communicate over a wire line communication network. This enables MTSO 18, and cellular system 10, to provide a communication link with conventional wire line telephones.

Detailed Description Text (12):

FIG. 2 shows a portion of cellular system 10 having a plurality of cellular telephones 14 and a more detailed block diagram of administrator station 22. In the preferred embodiment, administrator station 22 includes interface controller 24, station controller (host) 25, operator interface 26, cellular transmitter/receiver 28 and modulator/demodulator/DTMF generator (modem/DTMF generator) 30. Host 25 is preferably a digital computer and may have the capability of being coupled to, or networked with, other similar station controllers 25. Interface controller 24 serves as an interface circuit between host 25 and the cellular phone 14. Operator interface 26 is preferably

) a keyboard along with a CRT or other monitor. However, operator interface 26 can include a membrane keypad, or any other appropriate input device. Cellular transmitter/receiver 28 is preferably a conventional integrated circuit, or a chip set such as that provided by Phillips-Signetics. In addition, modem/DTMF generator 30 is preferably any suitable, and conventional, modem and DTMF generator provided for communication over a wire line or cellular telephone network.

Detailed Description Text (36) :

In accordance with the present invention, before an operator is provided with access to a cellular telephone 14, an operator profile or user profile corresponding to the operator is loaded into memory 50 in telephone 14 by administrator station 22. This is accomplished using one of the communication links described with reference to FIG. 2. In a preferred embodiment, the operator profile includes an operator identification code identifying the operator. The profile information also includes an allowed expenditure, or call credit, which reflects an amount of currency which the operator of cellular telephone 14 is authorized to spend on cellular communications with cellular telephone 14 during a predetermined time period. The operator profile may also include other profile information, such as a directory (which may be restricted) which holds an authorized directory of telephone numbers with which the operator of cellular telephone 14 can initiate communication, call rate information and operator privileges. Privileges preferably include the ability to modify the user's own profile, the ability to activate, deactivate and utilize certain function keys, and the ability to load and modify the dialing directory. Also, other functions preferably performed by administrator station 22, may also, if desired, be performable by cellular telephone 14, including the ability to export and edit call detail records and billing information, the ability to edit the owner or operator identification code, the ability to view and load call rate information, and the ability to load additional call credit.

Detailed Description Text (48) :

Control unit 38 then responds to overhead signals and determines whether the system identification variable (SID) for the system matches the system identification variable (SID) for the phone. This is determined once cellular telephone 14 is operational on a control channel in the system. If the SID for the system matches the home SID for the telephone, cellular telephone 14 is in its home system. If not, cellular telephone 14 is outside its home system, and roaming charges apply. If roaming charges apply, a roaming flag is set and the home SID in the cellular telephone 14 is reset to match the received SID for the particular system within which it is operating. Then, the initialization step at block 120 is repeated and control continues. This is indicated by block 122.

Detailed Description Text (53) :

If priority key dialing is allowed, control unit 38 determines whether the number of digits dialed are allowed. In other words, seven digits indicate a local call only, while ten or eleven digits indicate a long distance call. The user profile information stored in memory 50 indicates whether the particular user of cellular telephone 14 is allowed to dial long distance. This determination is made at block 146. If the number of digits dialed are allowed, then control unit 38 calculates the maximum call duration allowed for the call currently requested. This is based on the amount of call credit remaining and the costs associated with the current call, including whether roaming charges apply, whether the call is local or long distance, whether peak rates apply, and any other items programmed into cellular telephone 14, such as international rates, taxes or other charges. These items of information are preferably stored in look-up table form in non-volatile RAM in memory 50. This is indicated by block 148. Once the maximum call duration has been calculated in block 148, operation continues at block 126.

Detailed Description Text (105) :

The Roaming rate tabbed card allows the user to set the roaming rate for both off-peak and peak times. This tabbed card also allows the user to set daily roam charges or other fees which may be charged for roaming telephone calls.

Detailed Description Text (116) :

The present invention provides a cellular telephone system which has significant advantages over prior systems. The present invention provides a system in which costs

can proactively be controlled. In other words, cellular telephone 14 can be programmed with a maximum call credit, and control unit 38 controls operation of the cellular telephone based on the call credit. The cellular telephone 14 can be completely disabled upon reaching the call credit, or it can allow additional calls or only emergency telephone calls. Additional call credit can also be programmed into the cellular telephone 14 via the cellular network. Thus, cellular telephone 14 can be remotely programmed by administrator station 22. This remote link can be established even if the call credit has been depleted. This allows the user of the cellular phone 14 to add call credit at any time. Further, administrator station 22 proactively and automatically is capable of updating the call credit amount in cellular telephone 14 on a periodic basis.

Detailed Description Text (121) :

The present invention is also well suited to the auto rental market. Administrator station 22 is suitable for containing a data base of user profile information for a large number of renters or clients. This is downloaded as the client obtains the phone from the rental entity. The present cellular telephone system is suitable for tracking all calls made, by telephone number, for summarizing call detail information at the rental counter literally in seconds. The renter receives an accurate, detailed record of all calls made including roam charges and long distance and local charges. The rental company is assured that all charges are accounted for and the renter has been properly charged. This significantly reduces the chance that the rental company will obtain bad debts for rental telephone bills.